

CLAIMS

1 1. A two-stage amplifier that provides a two-stage amplifier output signal, said two-stage
2 amplifier comprising:

3 a first amplifier stage that receives a first amplifier input signal, and provides a first
4 amplifier output signal;

5 a second amplifier stage that includes a second amplifier input lead, and provides the two-
6 stage amplifier output signal;

7 a coupling capacitor having a first lead and a second lead, wherein said first lead receives
8 said first amplifier output signal, and said second lead is connected to said second amplifier input
9 lead such that said coupling capacitor is connected in series between said first and second amplifier
10 stages; and

11 a charge pump that generates a bias voltage that is applied said coupling capacitor via said
12 first and second leads to maintain the time average of the voltage across said coupling capacitor
13 constant.

1 2. The two-stage amplifier of claim 1, comprising an integrated voltage source that provides a
2 reference voltage to said charge pump.

1 3. The two-stage amplifier of claim 2, wherein said charge pump includes means for
2 generating said bias voltage to maintain a fixed ratio between said reference voltage and said first
3 amplifier input signal.

1 4. The two-stage amplifier of 1, wherein said first stage includes a transconductance
2 amplifier.

1 5. The two-stage amplifier of claim 4, comprising a compensation capacitor that is connected
2 electrically parallel to the input of said second amplifier stage.

1 6. The two-stage amplifier of claim 4, wherein said charge pump comprises:
2 a pump generator that is responsive to said reference signal and a clock signal, and
3 provides a first clock pulse on a first pump generator output lead and a second pump clock pulse
4 on a second pump generator output lead;
5 a first capacitor having a third lead and a fourth lead, wherein said third lead is connected
6 to said first pump generator output lead;
7 a second capacitor having a fifth lead and a sixth lead, wherein said fifth lead is connected
8 to said second pump generator output lead; and
9 a switching element that is coupled to said fourth lead and said sixth lead and provides a
10 first pump current to said first lead and a second pump current to said second lead.

1 7. The two-stage amplifier of claim 5, wherein the value of said coupling capacitor is less than
2 the value of said compensation capacitor.